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<110> Allen, Stephen M.

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Ser Tyr Gly Arg Gly Ala Asp Leu Asp Gly Val Pro Gln Pro Phe His

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Ile Pro Pro Asp Gln His Ala Leu Val Pro Ser Phe Val Gly Gly Gly
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Gln Pro Arg Ser Met Asp Pro Ser Lys Asp Leu Ala Ala Tyr Gly Tyr
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Phe Thr Val Thr Ser Lys Ala Ala Gly Asp Glu Ala Asp Ala Phe Gly
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Asp Leu Tyr Leu Phe Lys Trp Thr Thr Leu Leu Val Pro Pro Thr Thr
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Val Asn Asn Gly Tyr Gly Ser Trp Gly Pro Leu Phe Gly Lys Leu Phe
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Glu Arg Ser Pro Arg Pro Gly Asp Gln Arg Arg Gly Gly Leu Arg Ala
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Phe Arg Cys Ala Ala Ala Ala Gly Phe Val Arg Glu Arg Asp Pro Ala
    50                  55                  60

Gly Arg Gly Gly Gly Pro Glu Met Glu Ala Ser Ala Gly Leu Val Ala
65                  70                  75                  80

Gly Ser His Asn Arg Asn Glu Leu Val Val Ile Arg Arg Asp Arg Glu
                85                  90                  95

Ser Gly Ala Ala Gly Gly Gly Ala Ala Arg Arg Ala Glu Ala Pro Cys
            100                 105                 110

Gln Ile Cys Gly Asp Glu Val Gly Val Gly Phe Asp Gly Glu Pro Phe
        115                 120                 125

Val Ala Cys Asn Glu Cys Ala Phe Pro Val Cys Arg Ala Cys Tyr Glu
    130                 135                 140

Tyr Glu Arg Arg Glu Gly Ser Gln Ala Cys Pro Gln Cys Arg Thr Arg
145                 150                 155                 160

Tyr Lys Arg Leu Lys Gly Cys Pro Arg Val Ala Gly Asp Glu Glu Glu
                165                 170                 175

Asp Gly Val Asp Asp Leu Glu Gly Glu Phe Gly Leu Gln Asp Gly Ala
            180                 185                 190

Ala His Glu Asp Asp Pro Gln Tyr Val Ala Glu Ser Met Leu Arg Ala
        195                 200                 205

Gln Met Ser Tyr Gly Arg Gly Gly Asp Ala His Pro Gly Phe Ser Pro
    210                 215                 220

Val Pro Asn Val Pro Leu Leu Thr Asn Gly Gln Met Val Asp Asp Ile
225                 230                 235                 240

Pro Pro Glu Gln His Ala Leu Val Pro Ser Tyr Met Ser Gly Gly Gly
                245                 250                 255

Gly Gly Gly Lys Arg Ile His Pro Leu Pro Phe Ala Asp Pro Asn Leu
            260                 265                 270
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Pro Val Gln Pro Arg Ser Met Asp Pro Ser Lys Asp Leu Ala Ala Tyr
        275                 280                 285

Gly Tyr Gly Ser Val Ala Trp Lys Glu Arg Met Glu Gly Trp Lys Gln
    290                 295                 300

Lys Gln Glu Arg Leu Gln His Val Arg Ser Glu Gly Gly Gly Asp Trp
305                 310                 315                 320

Asp Gly Asp Asp Ala Asp Leu Pro Leu Met Asp Glu Ala Arg Gln Pro
                325                 330                 335

Leu Ser Arg Lys Val Pro Ile Ser Ser Ser Arg Ile Asn Pro Tyr Arg
            340                 345                 350

Met Ile Ile Val Ile Arg Leu Val Val Leu Gly Phe Phe Phe His Tyr
        355                 360                 365

Arg Val Met His Pro Ala Lys Asp Ala Phe Ala Leu Trp Leu Ile Ser
    370                 375                 380

Val Ile Cys Glu Ile Trp Phe Ala Met Ser Trp Ile Leu Asp Gln Phe
385                 390                 395                 400

Pro Lys Trp Leu Pro Ile Glu Arg Glu Thr Tyr Leu Asp Arg Leu Ser
                405                 410                 415

Leu Arg Phe Asp Lys Glu Gly Gln Pro Ser Gln Leu Ala Pro Ile Asp
            420                 425                 430

Phe Phe Val Ser Thr Val Asp Pro Thr Lys Glu Pro Pro Leu Val Thr
        435                 440                 445

Ala Asn Thr Val Leu Ser Ile Leu Ser Val Asp Tyr Pro Val Glu Lys
    450                 455                 460

Val Ser Cys Tyr Val Ser Asp Asp Gly Ala Ala Met Leu Thr Phe Glu
465                 470                 475                 480

Ala Leu Ser Glu Thr Ser Glu Phe Ala Lys Lys Trp Val Pro Phe Ser
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Lys Lys Phe Asn Ile Glu Pro Arg Ala Pro Glu Trp Tyr Phe Gln Gln
            500                 505                 510

Lys Ile Asp Tyr Leu Lys Asp Lys Val Ala Ala Ser Phe Val Arg Glu
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Arg Arg Ala Met Lys Arg Glu Tyr Glu Glu Phe Lys Val Arg Ile Asn
    530                 535                 540

Ala Leu Val Ala Lys Ala Gln Lys Val Pro Glu Glu Gly Trp Thr Met
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Gln Asp Gly Ser Pro Trp Pro Gly Asn Asn Val Arg Asp His Pro Gly
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Met Ile Gln Val Phe Leu Gly Gln Ser Gly Gly Arg Asp Val Glu Gly
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Asn Glu Leu Pro Arg Leu Val Tyr Val Ser Arg Glu Lys Arg Pro Gly
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Tyr Asn His His Lys Lys Ala Gly Ala Met Asn Ala Leu Val Arg Val
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Ser Ala Val Leu Ser Asn Ala Ala Tyr Leu Leu Asn Leu Asp Cys Asp
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His Tyr Ile Asn Asn Ser Lys Ala Ile Lys Glu Ala Met Cys Phe Met
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Met Asp Pro Leu Val Gly Lys Lys Val Cys Tyr Val Gln Phe Pro Gln
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Arg Phe Asp Gly Ile Asp Lys Asn Asp Arg Tyr Ala Asn Arg Asn Val
675 680 685

Val Phe Phe Asp Ile Asn Met Lys Gly Leu Asp Gly Ile Gln Gly Pro
690 695 700

Ile Tyr Val Gly Thr Gly Cys Val Phe Arg Arg Gln Ala Leu Tyr Gly
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Tyr Asp Ala Pro Lys Thr Lys Lys Pro Pro Ser Arg Thr Cys Asn Cys
725 730 735

Trp Pro Lys Trp Cys Leu Ser Cys Cys Cys Ser Arg Asn Lys Asn Lys
740 745 750

Lys Lys Thr Thr Lys Pro Lys Thr Glu Lys Lys Lys Arg Leu Phe Phe
755 760 765

Lys Lys Ala Glu Asn Pro Ser Pro Ala Tyr Ala Leu Gly Glu Ile Asp
770 775 780

Glu Gly Ala Pro Gly Ala Asp Ile Glu Lys Ala Gly Ile Val Asn Gln
785 790 795 800

Gln Lys Leu Glu Lys Lys Phe Gly Gln Ser Ser Val Phe Val Ala Ser
805 810 815

Thr Leu Leu Glu Asn Gly Gly Thr Leu Lys Ser Ala Ser Pro Ala Ser
820 825 830

Leu Leu Lys Glu Ala Ile His Val Ile Ser Cys Gly Tyr Glu Asp Lys
835 840 845

Thr Asp Trp Gly Lys Glu Ile Gly Trp Ile Tyr Gly Ser Ile Thr Glu
850 855 860

Asp Ile Leu Thr Gly Phe Lys Met His Cys His Gly Trp Arg Ser Ile
865 870 875 880

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Tyr Cys Ile Pro Lys Arg Pro Ala Phe Lys Gly Ser Ala Pro Leu Asn
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Leu Ser Asp Arg Leu His Gln Val Leu Arg Trp Ala Leu Gly Ser Val
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Glu Ile Phe Phe Ser Lys His Cys Pro Leu Trp Tyr Gly Tyr Gly Gly
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Gly Leu Lys Phe Leu Glu Arg Phe Ser Tyr Ile Asn Ser Ile Val Tyr
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Pro Trp Thr Ser Ile Pro Leu Leu Ala Tyr Cys Thr Leu Pro Ala Ile
945                 950                 955                 960

Cys Leu Leu Thr Gly Lys Phe Ile Thr Pro Glu Leu Thr Asn Val Ala
                965                 970                 975

Ser Ile Trp Phe Met Ala Leu Phe Ile Cys Ile Ser Val Thr Gly Ile
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Leu Glu Met Arg Trp Ser Gly Val Ala Ile Asp Asp Trp Trp Arg Asn
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Glu Gln Phe Trp Val Ile Gly Gly Val Ser Ala His Leu Phe Ala Val
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Phe Gln Gly Leu Leu Lys Val Phe Ala Gly Ile Asp Thr Ser Phe Thr
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Val Thr Ser Lys Ala Gly Asp Asp Glu Glu Phe Ser Glu Leu Tyr Thr
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Phe Lys Trp Thr Thr Leu Leu Ile Pro Pro Thr Thr Leu Leu Leu Leu
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Asn Phe Ile Gly Val Val Ala Gly Ile Ser Asn Ala Ile Asn Asn Gly
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Tyr Glu Ser Trp Gly Pro Leu Phe Gly Lys Leu Phe Phe Ala Phe Trp
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Val Ile Val His Leu Tyr Pro Phe Leu Lys Gly Leu Val Gly Arg Gln
1105                1110                1115                1120

Asn Arg Thr Pro Thr Ile Val Ile Val Trp Ser Ile Leu Leu Ala Ser
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Ile Phe Ser Leu Leu Trp Val Arg Val Asp Pro Phe Leu Ala Lys Ser
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Ala Pro Gly Gly Asp Pro Phe Val Ala Cys Asn Glu Cys Ala Phe Pro
     50                  55                  60

Val Cys Arg Asp Cys Tyr Glu Tyr Glu Arg Arg Glu Gly Thr Gln Asn
 65                  70                  75                  80

Cys Pro Gln Cys Lys Thr Arg Tyr Lys Arg Leu Lys Gly Cys Gln Arg
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Val Thr Gly Asp Glu Glu Glu Asp Gly Val Asp Asp Leu Asp Asn Glu
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Phe Asn Trp Asp Gly His Asp Ser Gln Ser Val Ala Glu Ser Met Leu
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Tyr Gly His Met Ser Tyr Gly Arg Gly Gly Asp Pro Asn Gly Ala Pro
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Gln Ala Phe Gln Leu Asn Pro Asn Val Pro Leu Leu Thr Asn Gly Gln
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Met Val Asp Asp Ile Pro Pro Glu Gln His Ala Leu Val Pro Ser Phe
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Met Gly Gly Gly Gly Lys Arg Ile His Pro Leu Pro Tyr Ala Asp Pro
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Ser Leu Pro Val Gln Pro Arg Ser Met Asp Pro Ser Lys Asp Leu Ala
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Asp Asp Gly Asp Asp Ala Asp Leu Pro Leu Met Asp Glu Ala Arg Gln
245 250 255

Gln Leu Ser Arg Lys Ile Pro Leu Pro Ser Ser Gln Ile Asn Pro Tyr
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Arg Met Ile Ile Ile Ile Arg Leu Val Val Leu Gly Phe Phe Phe His
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Tyr Arg Val Met His Pro Val Asn Asp Ala Phe Ala Leu Trp Leu Ile
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Ser Val Ile Cys Glu Ile Trp Phe Ala Met Ser Trp Ile Leu Asp Gln
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Phe Pro Lys Trp Phe Pro Ile Glu Arg Glu Thr Tyr Leu Asp Arg Leu
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Ser Leu Arg Phe Asp Lys Glu Gly Gln Pro Ser Gln Leu Ala Pro Ile
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Cys Lys Arg Tyr Asn Ile Glu Pro Arg Ala Pro Glu Trp Tyr Phe Gln
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Gln Lys Ile Asp Tyr Leu Lys Asp Lys Val Ala Ala Asn Phe Val Arg
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Glu Arg Arg Ala Met Lys Arg Glu Tyr Glu Glu Phe Lys Val Arg Ile
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Asn Ala Leu Val Ala Lys Ala Gln Lys Val Pro Glu Glu Gly Trp Thr
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485 490 495

Gly Met Ile Gln Val Phe Leu Gly Gln Ser Gly Gly Leu Asp Cys Glu

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Gly Tyr Asn His His Lys Lys Ala Gly Ala Met Asn Ala Leu Val Arg
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Val Ser Ala Val Leu Thr Asn Ala Pro Tyr Leu Leu Asn Leu Asp Cys
545                 550                 555                 560

Asp His Tyr Ile Asn Asn Ser Lys Ala Ile Lys Glu Ala Met Cys Phe
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Met Met Asp Pro Leu Leu Gly Lys Lys Val Cys Tyr Val Gln Phe Pro
            580                 585                 590

Gln Arg Phe Asp Gly Ile Asp Arg His Asp Arg Tyr Ala Asn Arg Asn
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Val Val Phe Phe Asp Ile Asn Met Lys Gly Leu Asp Gly Ile Gln Gly
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Pro Ile Tyr Val Gly Thr Gly Cys Val Phe Arg Arg Gln Ala Leu Tyr
625                 630                 635                 640

Gly Tyr Asp Ala Pro Lys Thr Lys Lys Pro Pro Ser Arg Thr Cys Asn
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Cys Trp Pro Lys Trp Cys Phe Cys Cys Cys Cys Phe Gly Asn Arg Lys
            660                 665                 670

Gln Lys Lys Thr Thr Lys Pro Lys Thr Glu Lys Lys Lys Leu Leu Phe
        675                 680                 685

Phe Lys Lys Glu Glu Asn Gln Ser Pro Ala Tyr Ala Leu Gly Glu Ile
    690                 695                 700

Asp Glu Ala Ala Pro Gly Ala Glu Asn Glu Lys Ala Gly Ile Val Asn
705                 710                 715                 720

Gln Gln Lys Leu Glu Lys Lys Phe Gly Gln Ser Ser Val Phe Val Thr
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Ser Thr Leu Leu Glu Asn Gly Gly Thr Leu Lys Ser Ala Ser Pro Ala
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Ser Leu Leu Lys Glu Ala Ile His Val Ile Ser Cys Gly Tyr Glu Asp
        755                 760                 765

Lys Thr Asp Trp Gly Lys Glu Ile Gly Trp Ile Tyr Gly Ser Val Thr
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Glu Asp Ile Leu Thr Gly Phe Lys Met His Cys His Gly Trp Arg Ser
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Ile Tyr Cys Ile Pro Lys Arg Val Ala Phe Lys Gly Ser Ala Pro Leu
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Gly Gly Leu Lys Phe Leu Glu Arg Phe Ser Tyr Ile Asn Ser Ile Val
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Tyr Pro Trp Thr Ser Ile Pro Leu Leu Ala Tyr Cys Thr Leu Pro Ala
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Ala Ser Leu Trp Phe Met Ser Leu Phe Ile Cys Ile Phe Ala Thr Ser
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Asn Glu Gln Phe Trp Val Ile Gly Gly Val Ser Ser His Leu Phe Ala
930 935 940

Val Phe Gln Gly Leu Leu Lys Val Ile Ala Gly Val Asp Thr Ser Phe
945 950 955 960

Thr Val Thr Ser Lys Gly Gly Asp Asp Glu Glu Phe Ser Glu Leu Tyr
965 970 975

Thr Phe Lys Trp Thr Thr Leu Leu Ile Pro Pro Thr Thr Leu Leu Leu
980 985 990

Leu Asn Phe Ile Gly Val Val Ala Gly Val Ser Asn Ala Ile Asn Asn
995 1000 1005

Gly Tyr Glu Ser Trp Gly Pro Leu Phe Gly Lys Leu Phe Phe Ala Phe
1010 1015 1020

Trp Val Ile Val His Leu Tyr Pro Phe Leu Lys Gly Leu Val Gly Arg
1025 1030 1035 1040

Gln Asn Arg Thr Pro Thr Ile Val Ile Val Trp Ser Ile Leu Leu Ala
1045 1050 1055

Ser Ile Phe Ser Leu Leu Trp Val Arg Ile Asp Pro Phe Leu Ala Lys
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Asp Asp Gly Pro Leu Leu Glu Glu Cys Gly Leu Asp Cys Asn
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<212> DNA
<213> Oryza sativa

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<211> 341
<212> PRT
<213> Oryza sativa

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Ala Ala Gly Tyr Pro Ala Gly Lys Val Thr Cys Tyr Ile Ser Asp Asp
35 40 45

Ala Gly Ala Glu Val Thr Arg Asn Ala Val Val Glu Ala Ala Arg Phe
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Ala Ala Leu Trp Val Ser Phe Cys Arg Lys His Gly Val Glu Pro Arg
65 70 75 80

Asn Leu Glu Ala Tyr Phe Asn Ala Gly Glu Gly Gly Gly Gly Lys Ala
85 90 95

Lys Val Val Ala Arg Gly Ser Tyr Arg Gly Met Ala Trp Pro Glu Leu
100 105 110

Val Arg Asp Arg Arg Arg Val Arg Arg Glu Tyr Glu Glu Met Arg Leu
115 120 125

Arg Ile Asp Ala Leu Gln Ala Ala Asp Ala Arg Arg Arg Arg Arg Gly
130 135 140

Ala Ala Asp Asp His Ala Gly Val Val Gln Val Leu Ile Asp Phe Ala
145 150 155 160

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Gly Ser Val Pro Gln Leu Gly Val Ala Asn Gly Ser Lys Leu Ile Asp
                165                 170                 175

Val Ala Ser Val Asp Val Cys Leu Pro Ala Leu Val Tyr Val Cys Arg
            180                 185                 190

Glu Lys Arg Arg Gly His Ala His His Arg Lys Ala Gly Ala Met Asn
        195                 200                 205

Ala Pro Phe Ile Leu Asp Leu Asp Cys Asp Tyr Tyr Val Asn Asn Ser
    210                 215                 220

Gln Ala Leu Arg Ala Gly Ile Cys Phe Met Ile Glu Arg Gly Gly Gly
225                 230                 235                 240

Gly Ala Ala Glu Asp Ala Gly Ala Val Ala Phe Val Gln Phe Pro Gln
                245                 250                 255

Arg Val Asp Gly Val Asp Pro Gly Asp Arg Tyr Ala Asn His Asn Arg
            260                 265                 270

Val Leu Phe Asp Cys Thr Glu Leu Gly Leu Asp Gly Leu Gln Gly Pro
        275                 280                 285

Ile Tyr Val Gly Thr Gly Cys Leu Phe Arg Arg Val Ala Leu Tyr Ser
    290                 295                 300

Val Asp Leu Pro Arg Trp Arg Pro Arg Arg Ser Leu Gly Cys Arg Leu
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Leu Ser Gly Pro Arg
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<212> DNA
<213> Glycine max

<400> 13

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<222> (201)
<223> Xaa = any amino acid

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Asp Gly Gln Val Cys Glu Ile Cys Gly Asp Gly Val Gly Leu Thr Val
        35                  40                  45

Asp Gly Asp Leu Phe Val Ala Cys Asn Glu Cys Gly Phe Pro Val Cys
    50                  55                  60

Arg Pro Cys Tyr Glu Tyr Glu Arg Arg Glu Gly Ser His Leu Cys Pro
65                  70                  75                  80

Gln Cys Lys Thr Arg Tyr Lys Arg Leu Lys Gly Ser Pro Arg Val Glu
                85                  90                  95

Gly Asp Asp Asp Glu Glu Asp Val Asp Asp Ile Glu His Glu Phe Asn
            100                 105                 110

Ile Asp Glu Gln Lys Asn Lys His Gly Gln Val Ala Glu Ala Met Leu
        115                 120                 125

His Gly Arg Met Ser Tyr Gly Arg Gly Pro Glu Asp Asp Asp Asn Ser
    130                 135                 140

Gln Phe Pro Thr Pro Val Ile Ala Gly Gly Arg Ser Arg Pro Val Ser
145                 150                 155                 160

Gly Glu Phe Pro Ile Ser Ser Asn Ala Tyr Gly Asp Gln Met Leu Ser
                165                 170                 175

Ser Ser Leu His Lys Arg Val His Pro Tyr Pro Val Ser Glu Pro Gly
            180                 185                 190

Ser Ala Arg Trp Asp Glu Lys Lys Xaa Asp Gly Trp Lys Asp Arg Met
        195                 200                 205

Asp Asp Trp Lys Leu Gln Gln Gly Asn Leu Gly Pro Glu Pro Asp Glu
    210                 215                 220

Asp Pro Asp Ala Ala Met Leu Asp Glu Ala Arg Gln Pro Leu Ser Arg
225                 230                 235                 240

Lys Val Pro Ile Ala Ser Ser Lys Ile Asn Pro Tyr Arg Met Val Ile
                245                 250                 255

Val Ala Arg Leu Val Ile Leu Ala Phe Phe Leu Arg Tyr Arg Leu Met
            260                 265                 270

Asn Pro Val His Asp Ala Leu Gly Leu Trp Leu Thr Ser Ile Ile Cys
        275                 280                 285

Glu Ile Trp Phe Ala Phe Ser Trp Ile Leu Asp Gln Phe Pro Lys Trp
    290                 295                 300
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Phe Pro Ile Asp Arg Glu Thr Tyr Leu Asp Arg Leu Ser Ile Arg Tyr
305 310 315 320

Glu Arg Glu Gly Glu Pro Asn Met Leu Ala Pro Val Asp Val Phe Val
325 330 335

Ser Thr Val Asp Pro Met Lys Glu Pro Pro Leu Val Thr Ala Asn Thr
340 345 350

Val Leu Ser Ile Leu Ala Met Asp Tyr Pro Val Asp Lys Ile Ser Cys
355 360 365

Tyr Ile Ser Asp Asp Gly Ala Ser Met Cys Thr Phe Glu Ser Leu Ser
370 375 380

Glu Thr Ala Glu Phe Ala Arg Lys Trp Val Pro Phe Cys Lys Lys Phe
385 390 395 400

Ser Ile Glu Pro Arg Ala Pro Glu Met Tyr Phe Ser Glu Lys Ile Asp
405 410 415

Tyr Leu Lys Asp Lys Val Gln Pro Thr Phe Val Lys Glu Arg Arg Ala
420 425 430

Met Lys Arg Glu Tyr Glu Glu Phe Lys Val Arg Ile Asn Ala Leu Val
435 440 445

Ala Lys Ala Gln Lys Val Pro Gln Gly Gly Trp Ile Met Gln Asp Gly
450 455 460

Thr Pro Trp Pro Gly Asn Asn Thr Lys Asp His Pro Gly Met Ile Gln
465 470 475 480

Val Phe Leu Gly Ser Ser Gly Gly Leu Asp Thr Glu Gly Asn Gln Leu
485 490 495

Pro Arg Leu Val Tyr Val Ser Arg Glu Lys Arg Pro Gly Phe Gln His
500 505 510

His Lys Lys Ala Gly Ala Met Asn Ala Leu Val Arg Val Ser Ala Val
515 520 525

Leu Thr Asn Ala Pro Phe Met Leu Asn Leu Asp Cys Asp His Tyr Val
530 535 540

Asn Asn Ser Lys Ala Ala Arg Glu Ala Met Cys Phe Leu Met Asp Pro
545 550 555 560

Gln Thr Gly Lys Lys Val Cys Tyr Val Gln Phe Pro Gln Arg Phe Asp
565 570 575

Gly Ile Asp Thr His Asp Arg Tyr Ala Asn Arg Asn Thr Val Phe Phe
580 585 590

Asp Ile Asn Met Lys Gly Leu Asp Gly Ile Gln Gly Pro Val Tyr Val
595 600 605

Gly Thr Gly Cys Val Phe Arg Arg Gln Ala Leu Tyr Gly Tyr Asn Pro
610 615 620

Pro Lys Gly Pro Lys Arg Pro Lys Met Val Ser Cys Asp Cys Cys Pro
625 630 635 640

Cys Phe Gly Ser Arg Lys Lys Tyr Lys Glu Lys Asn Asp Ala Asn Gly
645 650 655

Glu Ala Ala Ser Leu Lys Gly Met Asp Asp Asp Lys Glu Val Leu Met
660 665 670

Ser Gln Met Asn Phe Glu Lys Lys Phe Gly Gln Ser Ser Ile Phe Val
675 680 685

Thr Ser Thr Leu Met Glu Glu Gly Gly Val Pro Pro Ser Ser Ser Pro
690 695 700

Ala Ala Leu Leu Lys Glu Ala Ile His Val Ile Ser Cys Gly Tyr Glu
705 710 715 720

Asp Lys Thr Glu Trp Gly Leu Glu Leu Gly Trp Ile Tyr Gly Ser Ile
725 730 735

Thr Glu Asp Ile Leu Thr Gly Phe Lys Met His Cys Arg Gly Trp Arg
740 745 750

Ser Ile Tyr Cys Met Pro Lys Arg Ala Ala Phe Lys Gly Thr Ala Pro
755 760 765

Ile Asn Leu Ser Asp Arg Leu Asn Gln Val Leu Arg Trp Ala Leu Gly
770 775 780

Ser Ile Glu Ile Phe Phe Ser His His Cys Pro Leu Trp Tyr Gly Phe
785 790 795 800

Lys Glu Lys Lys Leu Lys Trp Leu Glu Arg Phe Ala Tyr Ala Asn Thr
805 810 815

Thr Val Tyr Pro Phe Thr Ser Ile Pro Leu Val Ala Tyr Cys Ile Leu
820 825 830

Pro Ala Val Cys Leu Leu Thr Asp Lys Phe Ile Met Pro Pro Ile Ser
835 840 845

Thr Phe Ala Gly Leu Tyr Phe Val Ala Leu Phe Ser Ser Ile Ile Ala
850 855 860

Thr Gly Ile Leu Glu Leu Lys Trp Ser Gly Val Ser Ile Glu Glu Trp
865 870 875 880

Trp Arg Asn Glu Gln Phe Trp Val Ile Gly Gly Val Ser Ala His Leu
885 890 895

Phe Ala Val Ile Gln Gly Leu Leu Lys Val Leu Ala Gly Ile Asp Thr
900 905 910

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Asn Phe Thr Val Thr Ser Lys Ala Thr Asp Asp Glu Glu Phe Gly Glu
        915                 920                 925

Leu Tyr Thr Phe Lys Trp Thr Thr Leu Leu Ile Pro Pro Thr Thr Ile
    930                 935                 940

Leu Ile Ile Asn Ile Val Gly Val Val Ala Gly Ile Ser Asp Ala Ile
945                 950                 955                 960

Asn Asn Gly Tyr Gln Ser Trp Gly Pro Leu Phe Gly Lys Leu Phe Phe
                965                 970                 975

Ser Phe Trp Val Ile Val His Leu Tyr Pro Phe Leu Lys Gly Leu Met
            980                 985                 990

Gly Arg Gln Asn Arg Thr Pro Thr Ile Val Val Ile Trp Ser Val Leu
        995                 1000                1005

Leu Ala Ser Ile Phe Ser Leu Leu Trp Val Arg Ile Asp Pro Phe Val
    1010                1015                1020

Leu Lys Thr Lys Gly Pro Asp Thr Lys Leu Cys Gly Ile Asn Cys
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<212> DNA
<213> Glycine max

<400> 15

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<212> PRT
<213> Glycine max

<400> 16

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Thr Pro Trp Pro Gly Asn Asn Pro Arg Asp His Pro Gly Met Ile Gln
             20                  25                  30

Val Phe Leu Gly His Ser Gly Gly Leu Asp Thr Asp Gly Asn Glu Leu
         35                  40                  45

Pro Arg Leu Val Tyr Val Ser Arg Glu Lys Arg Pro Gly Phe Gln His
     50                  55                  60

His Lys Lys Ala Gly Ala Met Asn Ala Leu Ile Arg Val Ser Ala Val
 65                  70                  75                  80

Leu Thr Asn Gly Ala Tyr Leu Leu Asn Val Asp Cys Asp His Tyr Phe
                 85                  90                  95

Asn Asn Ser Lys Ala Leu Lys Glu Ala Met Cys Phe Met Met Asp Pro
            100                 105                 110

Val Leu Gly Lys Lys Thr Cys Tyr Val Gln Phe Pro Gln Arg Phe Asp
        115                 120                 125

Gly Ile Asp Leu His Asp Arg Tyr Ala Asn Arg Asn Ile Val Phe Phe
    130                 135                 140

Asp Ile Asn Met Lys Gly Gln Asp Gly Val Gln Gly Pro Val Tyr Val
145                 150                 155                 160

Gly Thr Gly Cys Cys Phe Asn Arg Gln Ala Leu Tyr Gly Tyr Asp Pro
                165                 170                 175

Val Leu Thr Glu Glu Asp Leu Glu Pro Asn Ile Ile Val Lys Ser Cys
            180                 185                 190

Cys Gly Ser Arg Lys Lys Gly Lys Gly Gly Asn Lys Lys Tyr Ser Asp
        195                 200                 205

Lys Lys Lys Ala Met Gly Arg Thr Glu Ser Thr Val Pro Ile Phe Asn
    210                 215                 220
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Met Glu Asp Ile Glu Glu Gly Val Glu Gly Tyr Asp Asp Glu Arg Thr
225 230 235 240

Leu Leu Met Ser Gln Lys Ser Leu Glu Lys Arg Phe Gly Gln Ser Pro
245 250 255

Val Phe Ile Ala Ala Thr Phe Met Glu Gln Gly Gly Ile Pro Pro Ser
260 265 270

Thr Asn Pro Ala Thr Leu Leu Lys Glu Ala Ile His Val Ile Ser Cys
275 280 285

Gly Tyr Glu Asp Lys Thr Glu Trp Gly Lys Glu Ile Gly Trp Ile Tyr
290 295 300

Gly Ser Val Thr Glu Asp Ile Leu Thr Gly Phe Lys Met His Ala Arg
305 310 315 320

Gly Trp Ile Ser Ile Tyr Cys Met Pro Pro Arg Pro Ala Phe Lys Gly
325 330 335

Ser Ala Pro Ile Asn Leu Ser Asp Arg Leu Asn Gln Val Leu Arg Trp
340 345 350

Ala Leu Gly Ser Ile Glu Ile Phe Leu Ser Arg His Cys Pro Leu Trp
355 360 365

Tyr Gly Tyr Asn Gly Lys Leu Lys Pro Leu Met Arg Leu Ala Tyr Ile
370 375 380

Asn Thr Ile Val Tyr Pro Phe Thr Ser Ile Pro Leu Ile Ala Tyr Cys
385 390 395 400

Thr Leu Pro Ala Phe Cys Leu Leu Thr Asn Lys Phe Ile Ile Pro Glu
405 410 415

Ile Ser Asn Phe Ala Ser Met Trp Phe Ile Leu Leu Phe Val Ser Ile
420 425 430

Phe Thr Thr Ser Ile Leu Glu Leu Arg Trp Ser Gly Val Ser Ile Glu
435 440 445

Asp Trp Trp Arg Asn Glu Gln Phe Trp Val Ile Gly Gly Thr Ser Ala
450 455 460

His Leu Phe Ala Val Phe Gln Gly Leu Leu Lys Val Leu Ala Gly Ile
465 470 475 480

Asp Thr Asn Phe Thr Val Thr Ser Lys Ala Ser Asp Glu Asp Gly Asp
485 490 495

Phe Ala Glu Leu Tyr Val Phe Lys Trp Thr Ser Leu Leu Ile Pro Pro
500 505 510

Thr Thr Val Leu Ile Val Asn Leu Val Gly Ile Val Ala Gly Val Ser
515 520 525

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Tyr Ala Ile Asn Ser Gly Tyr Gln Ser Trp Gly Pro Leu Phe Gly Lys
    530                 535                 540

Leu Phe Phe Ala Ile Trp Val Ile Ala His Leu Tyr Pro Phe Leu Lys
545                 550                 555                 560

Gly Leu Leu Gly Arg Gln Asn Arg Thr Pro Thr Ile Val Ile Val Trp
                565                 570                 575

Ser Val Leu Leu Ala Ser Ile Phe Ser Leu Leu Trp Val Arg Ile Asp
            580                 585                 590

Pro Phe Thr Ser Asp Ser Asn Lys Leu Thr Asn Gly Gln Cys Gly Ile
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Asn Cys
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<210> 17
<211> 2890
<212> DNA
<213> Glycine max

<400> 17

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agaaacatac cttgatcgtc tgtcactcag gtatgaaaaa gaagggaagc catctgagtt  180
gtccagtgta gacgtctttg tcagtactgt tgatcccatg aaggaacctc cactgattac  240
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tgatgttgaa ggaaatgagc taccccgctt ggtctacgtt tctagagaaa agaggccagg  720
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<211> 793
<212> PRT
<213> Glycine max

<400> 18
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Pro Lys Trp Tyr Pro Ile Gln Arg Glu Thr Tyr Leu Asp Arg Leu Ser
35 40 45

Leu Arg Tyr Glu Lys Glu Gly Lys Pro Ser Glu Leu Ser Ser Val Asp
50 55 60

Val Phe Val Ser Thr Val Asp Pro Met Lys Glu Pro Pro Leu Ile Thr
65 70 75 80

Ala Asn Thr Val Leu Ser Ile Leu Ala Val Asp Tyr Pro Val Asp Lys
85 90 95

Val Ala Cys Tyr Val Ser Asp Asp Gly Ala Ala Met Leu Thr Phe Glu
100 105 110

Ala Leu Ser Glu Thr Ser Glu Phe Ala Arg Arg Trp Val Pro Phe Cys
115 120 125

Lys Lys Tyr Asn Ile Glu Pro Arg Ala Pro Glu Trp Tyr Phe Gly Gln
130 135 140

Lys Met Asp Tyr Leu Lys Asn Lys Val His Pro Ala Phe Val Arg Glu
145 150 155 160

Arg Arg Ala Met Lys Arg Asp Tyr Glu Glu Phe Lys Val Arg Ile Asn
165 170 175

Ser Leu Val Ala Thr Ala Gln Lys Val Pro Glu Asp Gly Trp Thr Met
180 185 190

Gln Asp Gly Thr Pro Trp Pro Gly Asn Asn Val Arg Asp His Pro Gly
195 200 205

Met Ile Gln Val Phe Leu Gly Gln Asp Gly Val Arg Asp Val Glu Gly
210 215 220

Asn Glu Leu Pro Arg Leu Val Tyr Val Ser Arg Glu Lys Arg Pro Gly
225 230 235 240

Phe Asp His His Lys Lys Ala Gly Ala Met Asn Ala Leu Val Arg Ala
245 250 255

Ser Ala Ile Ile Thr Asn Ala Pro Tyr Leu Leu Asn Val Asp Cys Asp
260 265 270

His Tyr Ile Asn Asn Ser Lys Ala Leu Arg Glu Ala Met Cys Phe Met
275 280 285

Met Asp Pro Gln Leu Gly Lys Lys Val Cys Tyr Val Gln Phe Pro Gln
290 295 300

Arg Phe Asp Gly Ile Asp Arg His Asp Arg Tyr Ser Asn Arg Asn Val
305 310 315 320

Val Phe Phe Asp Ile Asn Met Lys Gly Leu Asp Gly Ile Gln Gly Pro
325 330 335

Ile Tyr Val Gly Thr Gly Cys Val Phe Arg Arg Tyr Ala Leu Tyr Gly
340 345 350

Tyr Asp Ala Pro Ala Lys Lys Lys Pro Pro Ser Lys Thr Cys Asn Cys
355 360 365

Trp Pro Lys Trp Cys Cys Leu Cys Cys Gly Ser Arg Lys Lys Lys Asn
370 375 380

Ala Asn Ser Lys Lys Glu Lys Lys Arg Lys Val Lys His Ser Glu Ala
385 390 395 400

Ser Lys Gln Ile His Ala Leu Glu Asn Ile Glu Ala Gly Asn Glu Gly
405 410 415

Thr Asn Asn Glu Lys Thr Ser Asn Leu Thr Gln Thr Lys Leu Glu Lys
420 425 430

Arg Phe Gly Gln Ser Pro Val Phe Val Ala Ser Thr Leu Leu Asp Asp
435 440 445

Gly Gly Val Pro His Gly Val Ser Pro Ala Ser Leu Leu Lys Glu Ala
450 455 460

Ile Gln Val Ile Ser Cys Gly Tyr Glu Asp Lys Thr Glu Trp Gly Lys
465 470 475 480

Glu Val Gly Trp Ile Tyr Gly Ser Val Thr Glu Asp Ile Leu Thr Gly
485 490 495

Phe Lys Met His Cys His Gly Trp Arg Ser Val Tyr Cys Ile Pro Lys
500 505 510

Arg Pro Ala Phe Lys Gly Ser Ala Pro Ile Asn Leu Ser Asp Arg Leu
515 520 525

His Gln Val Leu Arg Trp Ala Leu Gly Ser Val Glu Ile Phe Phe Ser
530 535 540

Arg His Cys Pro Ile Trp Tyr Gly Tyr Gly Gly Gly Leu Lys Leu Leu
545 550 555 560

Glu Arg Phe Ser Tyr Ile Asn Ser Val Val Tyr Pro Trp Thr Ser Leu
565 570 575

Pro Leu Leu Val Tyr Cys Thr Leu Pro Ala Ile Cys Leu Leu Thr Gly
580 585 590

Lys Phe Ile Val Pro Glu Ile Ser Asn Tyr Ala Ser Leu Val Phe Met
595 600 605

Ala Leu Phe Ile Ser Ile Ala Ala Thr Gly Ile Leu Glu Met Gln Trp
610 615 620

Gly Gly Val Ser Ile Asp Asp Trp Trp Arg Asn Glu Gln Phe Trp Val
625 630 635 640

Ile Gly Gly Val Ser Ser His Leu Phe Ala Leu Phe Gln Gly Leu Leu
645 650 655

Lys Val Leu Ala Gly Val Asn Thr Asn Phe Thr Val Thr Ser Lys Ala
660 665 670

Ala Asp Asp Gly Glu Phe Ser Glu Leu Tyr Ile Phe Lys Trp Thr Ser
675 680 685

Leu Leu Ile Pro Pro Met Thr Leu Leu Ile Met Asn Ile Val Gly Val
690 695 700

Val Val Gly Ile Ser Asp Ala Ile Asn Asn Gly Tyr Asp Ser Trp Gly
705 710 715 720

Pro Leu Phe Gly Arg Leu Phe Phe Ala Leu Trp Val Ile Leu His Leu
725 730 735

Tyr Pro Phe Leu Lys Gly Leu Leu Gly Lys Gln Asp Arg Met Pro Thr
740 745 750

Ile Ile Leu Val Trp Ser Ile Leu Leu Ala Ser Ile Leu Thr Leu Met
755 760 765

Trp Val Arg Ile Asn Pro Phe Val Ser Arg Asp Gly Pro Val Leu Glu
770 775 780

Ile Cys Gly Leu Asn Cys Asp Glu Ser
785 790

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<211> 1733
<212> DNA
<213> Triticum aestivum

<220>
<221> unsure
<222> (262)
<223> n = a, c, g or t

<400> 19
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tttgatatta acttgagggg ccttgacggc attcaaggac cagtttatgt gggaactggt 180
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<210> 20
<211> 506
<212> PRT
<213> Triticum aestivum

<220>
<221> UNSURE
<222> (88)
<223> Xaa = any amino acid

<400> 20

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Tyr Val Gln Phe Pro Gln Arg Phe Asp Gly Ile Asp Arg Asn Asp Arg
             20                  25                  30

Tyr Ala Asn Arg Asn Thr Val Phe Phe Asp Ile Asn Leu Arg Gly Leu
         35                  40                  45

Asp Gly Ile Gln Gly Pro Val Tyr Val Gly Thr Gly Cys Val Phe Asn
     50                  55                  60

Arg Thr Ala Ile Tyr Gly Tyr Glu Pro Pro Ile Lys Ala Lys Lys Pro
 65                  70                  75                  80

Gly Phe Leu Ala Ser Leu Cys Xaa Gly Lys Lys Lys Ala Ser Lys Ser
                 85                  90                  95

Lys Lys Arg Ser Ser Asp Lys Lys Lys Ser Asn Lys His Val Asp Ser
            100                 105                 110

Ser Val Pro Val Phe Asn Leu Glu Asp Ile Glu Glu Gly Val Glu Gly
        115                 120                 125

Ala Gly Phe Asp Asp Glu Lys Ser Val Leu Met Ser Gln Met Ser Leu
    130                 135                 140

Glu Lys Arg Phe Gly Gln Ser Ala Ala Phe Val Ala Ser Thr Leu Met
145                 150                 155                 160

Glu Tyr Gly Gly Val Pro Gln Ser Ser Thr Pro Glu Ser Leu Leu Lys
                165                 170                 175

Glu Ala Ile His Val Ile Ser Cys Gly Tyr Glu Asp Lys Ser Glu Trp
            180                 185                 190

Gly Thr Glu Ile Gly Trp Ile Tyr Gly Ser Val Thr Glu Asp Ile Leu
        195                 200                 205

Thr Gly Phe Lys Met His Ala Arg Gly Trp Arg Ser Ile Tyr Cys Met
    210                 215                 220

Pro Lys Arg Pro Ala Phe Lys Gly Ser Ala Pro Ile Asn Leu Ser Asp
225                 230                 235                 240

Arg Leu Asn Gln Val Leu Arg Trp Ala Leu Gly Ser Val Glu Ile Leu
                245                 250                 255

Phe Ser Arg His Cys Pro Leu Trp Tyr Gly Tyr Gly Gly Arg Leu Lys
            260                 265                 270

Phe Leu Glu Arg Phe Ala Tyr Ile Asn Thr Thr Ile Tyr Pro Leu Thr
        275                 280                 285

Ser Leu Pro Leu Leu Val Tyr Cys Ile Leu Pro Ala Ile Cys Leu Leu
    290                 295                 300
```

```
Thr Gly Lys Phe Ile Met Pro Glu Ile Ser Asn Leu Ala Ser Ile Trp
305                 310                 315                 320

Phe Ile Ala Leu Phe Leu Ser Ile Phe Ala Thr Gly Ile Leu Glu Met
                325                 330                 335

Arg Trp Ser Gly Val Gly Ile Asp Glu Trp Trp Arg Asn Glu Gln Phe
            340                 345                 350

Trp Val Ile Gly Gly Ile Ser Ala His Leu Phe Ala Val Phe Gln Gly
        355                 360                 365

Leu Leu Lys Val Leu Ala Gly Ile Asp Thr Asn Phe Thr Val Thr Ser
    370                 375                 380

Lys Ala Asn Asp Glu Glu Gly Asp Phe Ala Glu Leu Tyr Met Phe Lys
385                 390                 395                 400

Trp Thr Thr Leu Leu Ile Pro Pro Thr Thr Ile Leu Ile Ile Asn Met
                405                 410                 415

Val Gly Val Val Ala Gly Thr Ser Tyr Ala Ile Asn Ser Gly Tyr Gln
            420                 425                 430

Ser Trp Gly Pro Leu Phe Gly Lys Leu Phe Phe Ala Phe Trp Val Ile
        435                 440                 445

Val His Leu Tyr Pro Phe Leu Lys Gly Leu Met Gly Arg Gln Asn Arg
    450                 455                 460

Thr Pro Thr Ile Val Ile Val Trp Ala Val Leu Leu Ala Ser Ile Phe
465                 470                 475                 480

Ser Leu Leu Trp Val Arg Val Asp Pro Phe Thr Thr Arg Leu Ala Gly
                485                 490                 495

Pro Asn Ile Gln Thr Cys Gly Ile Asn Cys
            500                 505
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<210> 21
<211> 1029
<212> DNA
<213> Triticum aestivum

<400> 21

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ggtcacagcg aacactgtcc tttccatcct ttctgtggat tatccggttg agaaggtctc  720
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<210> 22
<211> 340
<212> PRT
<213> Triticum aestivum

<400> 22

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Pro Leu Leu Thr Asn Gly Gln Met Val Asp Asp Ile Pro Pro Glu Gln
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His Ala Leu Val Pro Ser Tyr Met Ser Gly Gly Gly Gly Gly Gly Lys
             20                  25                  30

Arg Ile His Pro Leu Pro Phe Ala Asp Pro Asn Leu Pro Val Gln Pro
         35                  40                  45

Arg Ser Met Asp Pro Ser Lys Asp Leu Ala Ala Tyr Gly Tyr Gly Ser
     50                  55                  60

Val Ala Trp Lys Glu Arg Met Glu Gly Trp Lys Gln Lys Gln Glu Arg
 65                  70                  75                  80

Leu Gln His Val Arg Ser Glu Gly Gly Gly Asp Trp Asp Gly Asp Asp
                 85                  90                  95

Ala Asp Leu Pro Leu Met Asp Glu Ala Arg Gln Pro Leu Ser Arg Lys
            100                 105                 110

Val Pro Ile Ser Ser Ser Arg Ile Asn Pro Tyr Arg Met Ile Ile Val
        115                 120                 125

Ile Arg Leu Val Val Leu Gly Phe Phe Phe His Tyr Arg Val Met His
    130                 135                 140

Pro Ala Lys Asp Ala Phe Ala Leu Trp Leu Ile Ser Val Ile Cys Glu
145                 150                 155                 160

Ile Trp Phe Ala Met Ser Cys Ile Leu Asp Gln Phe Pro Lys Trp Phe
                165                 170                 175

Pro Ile Glu Arg Glu Thr Tyr Leu Asp Arg Leu Ser Leu Arg Phe Asp
            180                 185                 190

Lys Glu Gly Gln Pro Ser Gln Leu Ala Pro Ile Asp Phe Phe Val Ser
        195                 200                 205

Thr Val Asp Pro Thr Lys Glu Pro Pro Leu Val Thr Ala Asn Thr Val
    210                 215                 220

Leu Ser Ile Leu Ser Val Asp Tyr Pro Val Glu Lys Val Ser Cys Tyr
225                 230                 235                 240
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```
Val Ser Asp Asp Gly Ala Ala Met Leu Thr Phe Glu Ala Leu Ser Glu
                245                 250                 255

Thr Ser Glu Phe Ala Lys Lys Trp Val Pro Phe Ser Lys Lys Phe Asn
            260                 265                 270

Ile Glu Pro Arg Ala Pro Glu Trp Tyr Phe Gln Gln Lys Ile Asp Tyr
        275                 280                 285

Leu Lys Asp Lys Val Ala Ala Ser Phe Val Arg Glu Arg Arg Ala Met
    290                 295                 300

Lys Arg Glu Tyr Glu Glu Phe Lys Val Arg Ile Asn Ala Leu Val Ala
305                 310                 315                 320

Lys Ala Gln Lys Val Pro Glu Glu Gly Trp Thr Met Gln Asp Gly Ser
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Pro Trp Pro Gly
            340
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<210> 23
<211> 2663
<212> DNA
<213> Picramnia pentandra

<400> 23

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<210> 24
<211> 740
<212> PRT
<213> Picramnia pentandra

<400> 24

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Val Ser Thr Val Asp Pro Met Lys Glu Pro Pro Leu Ile Thr Ala Asn
             20                  25                  30

Thr Val Leu Ser Ile Leu Ala Val Asp Tyr Pro Val Asp Lys Val Thr
         35                  40                  45

Cys Tyr Val Ser Asp Asp Gly Ala Ala Met Leu Thr Phe Glu Ala Leu
     50                  55                  60

Ser Glu Thr Ser Glu Phe Ala Arg Lys Trp Val Pro Phe Cys Lys Lys
 65                  70                  75                  80

Phe Ser Ile Glu Pro Arg Ala Pro Glu Trp Tyr Phe Ser Gln Lys Met
                 85                  90                  95

Asp Tyr Leu Lys Asn Lys Val His Pro Ser Phe Val Arg Glu Arg Arg
            100                 105                 110

Ala Met Lys Arg Glu Tyr Glu Val Phe Lys Val Arg Ile Asn Gly Leu
        115                 120                 125

Val Ala Met Ala Gln Lys Val Pro Glu Asp Gly Trp Thr Met Gln Asp
    130                 135                 140

Gly Thr Pro Trp Pro Gly Asn Asn Val Arg Asp His Pro Gly Met Ile
145                 150                 155                 160

Gln Val Phe Leu Gly His Asn Gly Val Arg Asp Val Glu Gly Asn Glu
                165                 170                 175
```

```
Leu Pro Arg Leu Ile Tyr Val Ser Arg Glu Lys Arg Pro Gly Phe Glu
            180                 185                 190

His His Lys Lys Ala Gly Ala Met Asn Ser Leu Val Arg Val Ser Ala
        195                 200                 205

Val Ile Ser Asn Ala Pro Tyr Ile Leu Asn Val Asp Cys Asp His Tyr
    210                 215                 220

Ile Asn Asn Ser Lys Ala Leu Arg Glu Ala Met Cys Phe Met Met Asp
225                 230                 235                 240

Pro Thr Ser Gly Lys Lys Leu Cys Tyr Val Gln Phe Pro Gln Arg Phe
                245                 250                 255

Asp Gly Ile Asp Arg His Asp Arg Tyr Ser Asn Arg Asn Val Val Phe
            260                 265                 270

Phe Asp Ile Asn Met Lys Gly Leu Asp Gly Ile Gln Gly Pro Ile Tyr
        275                 280                 285

Val Gly Thr Gly Cys Val Phe Arg Arg Val Ala Leu Tyr Gly Tyr Asp
    290                 295                 300

Ala Pro Val Thr Lys Lys Ser Pro Gly Lys Ala Cys Asn Cys Trp Pro
305                 310                 315                 320

Lys Trp Leu Cys Cys Cys Cys Gly Ser Arg Lys Asn Lys Lys Ser Lys
                325                 330                 335

Pro Lys Lys Glu Lys Lys Lys Ser Lys Asn Arg Glu Ala Ser Lys Gln
            340                 345                 350

Ile His Ala Leu Glu Asn Ile Glu Glu Gly Met Gly Gly Leu Asn Ser
        355                 360                 365

Glu Lys Ser Cys Glu Thr Thr Pro Leu Lys Leu Glu Lys Lys Phe Gly
    370                 375                 380

Gln Ser Pro Val Phe Val Ala Ser Thr Leu Leu Glu Asp Gly Gly Val
385                 390                 395                 400

Pro Gln Asp Ala Thr Pro Ala Ala Leu Leu Lys Glu Ala Ile Gln Val
                405                 410                 415

Ile Ser Cys Gly Tyr Glu Asp Lys Thr Glu Trp Gly Lys Glu Val Gly
            420                 425                 430

Trp Ile Tyr Gly Ser Val Thr Glu Asp Ile Leu Thr Gly Phe Lys Met
        435                 440                 445

His Cys His Gly Trp Arg Ser Val Tyr Cys Met Pro Ala Arg Pro Ala
    450                 455                 460

Phe Lys Gly Ser Ala Pro Ile Asn Leu Ser Asp Arg Leu His Gln Val
465                 470                 475                 480
```

```
Leu Arg Trp Ala Leu Gly Ser Val Glu Ile Phe Leu Ser Arg His Cys
                485                 490                 495

Pro Leu Trp Tyr Gly Tyr Gly Gly Gly Leu Lys Trp Leu Glu Arg Phe
            500                 505                 510

Ser Tyr Val Ser Ser Val Val Tyr Pro Trp Thr Ser Ile Pro Leu Leu
        515                 520                 525

Val Tyr Cys Thr Leu Pro Ala Ile Cys Leu Leu Thr Gly Lys Phe Ile
    530                 535                 540

Val Pro Glu Ile Ser Asn Tyr Ala Ser Ile Leu Phe Met Leu Leu Phe
545                 550                 555                 560

Ile Phe Ile Ala Ala Thr Ser Ile Leu Glu Met Gln Trp Gly Gly Val
                565                 570                 575

Gly Ile Asp Asp Trp Trp Arg Asn Glu Gln Phe Trp Val Ile Gly Gly
            580                 585                 590

Val Ser Ser His Leu Phe Ala Leu Phe Gln Gly Leu Leu Lys Val Leu
        595                 600                 605

Ala Gly Val Asn Thr Asn Phe Thr Val Thr Ser Lys Ala Ala Asp Glu
    610                 615                 620

Gly Asp Phe Ser Glu Leu Tyr Leu Phe Lys Trp Thr Thr Leu Leu Ile
625                 630                 635                 640

Pro Pro Thr Thr Leu Leu Ile Ile Asn Ile Val Gly Val Val Val Gly
                645                 650                 655

Val Ser Asp Ala Ile Asn Asn Gly Tyr Asp Ser Trp Gly Pro Leu Phe
            660                 665                 670

Gly Arg Leu Phe Phe Ala Phe Trp Val Ile Val His Leu Tyr Pro Phe
        675                 680                 685

Leu Lys Gly Leu Leu Gly Lys Gln Asp Arg Thr Pro Thr Ile Ile Val
    690                 695                 700

Val Trp Ser Ile Leu Leu Ala Ser Ile Leu Thr Leu Leu Trp Val Arg
705                 710                 715                 720

Ile Asn Pro Phe Val Ser Arg Asp Gly Pro Val Leu Glu Val Cys Gly
                725                 730                 735

Leu Asn Cys Asp
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<211> 3563
<212> DNA
<213> Impatiens balsamia

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aatgaatgtg gattccccgt ttgccggcct tgttacgagt acgaaaggaa agatggaaac 240
caatgctgcc ctcagtgcaa gaccagatac aaaagacaga aagggagtcc tagagttgaa 300
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<211> 1091
<212> PRT
<213> Impatiens balsamia

<400> 26
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Glu Leu Val Arg Ile Arg His Asp Ser Asp Gly Gly Gln Pro Lys Pro
             20                  25                  30

Leu Lys Glu Ala Asn Gly Gln Ile Cys Gln Ile Cys Gly Asp Thr Val
         35                  40                  45

Gly Lys Ser Ala Thr Gly Asp Thr Phe Val Ala Cys Asn Glu Cys Gly
     50                  55                  60

Phe Pro Val Cys Arg Pro Cys Tyr Glu Tyr Glu Arg Lys Asp Gly Asn
 65                  70                  75                  80

Gln Cys Cys Pro Gln Cys Lys Thr Arg Tyr Lys Arg Gln Lys Gly Ser
                 85                  90                  95

Pro Arg Val Glu Gly Asp Glu Glu Glu Glu Asp Val Asp Asp Leu Glu
            100                 105                 110

Asn Glu Phe Asn Tyr Ser Gly Lys Gly Lys Asn Gln Lys Lys Val Thr
        115                 120                 125

Thr Ala Arg Arg Pro Trp Gln Gly Asp Gln Gln Asp Ile Glu Leu Ser
    130                 135                 140

Val Ser Ser Ser Arg His Asp Glu Ser Gln Gln Pro Val Pro Leu Leu
145                 150                 155                 160

Thr His Gly His Ser Val Ser Gly Glu Ile Pro Thr Pro Asp Asn His
                165                 170                 175

Ser Ile Arg Thr Thr Ser Gly Pro Ile Gly Pro Val Glu Lys Ser Ile
            180                 185                 190

Pro Tyr Ile Asp Pro Arg Gln Pro Val Ala Val Arg Ile Ile Val Asp
        195                 200                 205

Pro Ser Lys Asp Leu Asn Ser Tyr Gly Leu Gly Asn Val Asp Trp Lys
    210                 215                 220

Glu Arg Val Glu Gly Trp Lys Leu Lys Gln Glu Lys Asn Met Val Gln
225                 230                 235                 240
```

```
Met Thr Ser Arg Tyr Pro Glu Gly Lys Gly Asp Thr Glu Gly Thr Gly
                245                 250                 255

Ser Asn Gly Glu Glu Leu Gln Met Ala Ala Asp Asp Ile Arg Gln Pro
            260                 265                 270

Met Ser Arg Ile Val Pro Ile Ser Ser Thr His Leu Thr Pro Tyr Arg
        275                 280                 285

Val Val Ile Ile Leu Arg Leu Ile Ile Leu Gly Phe Phe Leu Gln Tyr
    290                 295                 300

Arg Cys Thr His Pro Val Lys Asp Ala Tyr Pro Leu Trp Leu Thr Ser
305                 310                 315                 320

Val Ile Cys Glu Val Trp Phe Ala Leu Ser Trp Leu Leu Asp Gln Phe
                325                 330                 335

Pro Lys Trp Ser Pro Val Asn Arg Glu Thr Tyr Leu Asp Arg Leu Ser
            340                 345                 350

Met Arg Phe Asp Arg Glu Gly Glu Pro Ser Gln Leu Ala Pro Ile Asp
        355                 360                 365

Val Phe Val Ser Thr Val Asp Pro Leu Lys Glu Pro Pro Leu Val Thr
    370                 375                 380

Ala Asn Thr Val Leu Ser Ile Leu Ala Val Asp Tyr Pro Val Asp Lys
385                 390                 395                 400

Val Ser Cys Tyr Val Ser Asp Asp Gly Ser Ala Met Leu Thr Phe Glu
                405                 410                 415

Ala Leu Ser Glu Thr Ala Glu Phe Ala Lys Lys Trp Ala Pro Phe Cys
            420                 425                 430

Lys Lys His Ser Ile Glu Pro Arg Ala Pro Glu Phe Tyr Phe Ala Gln
        435                 440                 445

Lys Ile Asp Tyr Leu Lys Asp Lys Val Gln Pro Ser Phe Val Lys Glu
    450                 455                 460

Arg Arg Ala Met Lys Arg Glu Tyr Glu Glu Phe Lys Val Arg Ile Asn
465                 470                 475                 480

Ala Leu Val Ala Lys Ala Gln Lys Val Pro Glu Glu Gly Trp Thr Met
                485                 490                 495

Gln Asp Gly Thr Pro Trp Pro Gly Asn Asn Ser Arg Asp His Pro Gly
            500                 505                 510

Met Ile Gln Val Phe Leu Gly His Ser Gly Gly Phe Asp Thr Glu Gly
        515                 520                 525

Asn Glu Leu Pro Arg Leu Val Tyr Val Ser Arg Glu Lys Arg Pro Gly
    530                 535                 540
```

Phe Gln His His Lys Lys Ala Gly Ala Met Asn Ala Leu Ile Arg Val
545 550 555 560

Ser Ala Val Leu Thr Asn Gly Ala Tyr Leu Leu Asn Val Asp Cys Asp
565 570 575

His Tyr Phe Asn Asn Ser Lys Cys Leu Lys Glu Ala Met Cys Phe Met
580 585 590

Met Asp Pro Asn Leu Gly Lys Lys Thr Cys Tyr Val Gln Phe Pro Gln
595 600 605

Arg Phe Asp Gly Ile Asp Leu His Asp Arg Tyr Ala Asn Arg Asn Ile
610 615 620

Val Phe Phe Asp Ile Asn Leu Lys Gly Leu Asp Gly Ile Gln Gly Pro
625 630 635 640

Val Tyr Val Gly Thr Gly Cys Cys Phe Asn Arg Gln Ala Leu Tyr Gly
645 650 655

Tyr Asp Pro Val Leu Thr Glu Glu Asp Leu Glu Pro Asn Ile Ile Ile
660 665 670

Lys Ser Cys Cys Gly Ser Arg Lys Lys Gly Lys Gly Gly Asn Lys Lys
675 680 685

Tyr Ile Asp Lys Asn Arg Ala Leu Lys Arg Thr Glu Ser Thr Ala Pro
690 695 700

Ile Phe Asn Met Glu Asp Ile Glu Glu Gly Ile Glu Gly Tyr Asp Asp
705 710 715 720

Glu Arg Ser Phe Leu Met Ala Gln Ser Tyr Glu Lys Arg Phe Gly Gln
725 730 735

Ser Pro Val Leu Ile Ala Ala Thr Phe Met Glu Gln Gly Gly Leu Pro
740 745 750

Pro Ser Thr Asn Ser Ala Thr Leu Leu Lys Glu Ala Ile His Val Ile
755 760 765

Ser Cys Gly Tyr Glu Asp Lys Thr Glu Trp Gly Lys Glu Ile Gly Trp
770 775 780

Ile Tyr Gly Ser Val Thr Glu Asp Ile Leu Thr Gly Phe Lys Met His
785 790 795 800

Thr Arg Gly Trp Ile Ser Ile Tyr Cys Met Pro Pro Arg Pro Ala Phe
805 810 815

Lys Gly Ser Ala Pro Ile Asn Leu Ser Asp Arg Leu Asn Gln Val Leu
820 825 830

Arg Trp Ala Leu Gly Ser Ile Glu Ile Leu Leu Ser Arg His Cys Pro
835 840 845

```
Ile Trp Tyr Gly Tyr Ser Gly Arg Leu Lys Phe Leu Glu Arg Leu Ala
    850                 855                 860

Tyr Ile Asn Thr Ile Val Tyr Pro Leu Thr Ser Ile Pro Leu Leu Ala
865                 870                 875                 880

Tyr Cys Thr Leu Pro Ala Ile Cys Leu Leu Thr Gly Lys Phe Ile Val
                885                 890                 895

Pro Glu Ile Ser Asn Tyr Ala Ser Ile Trp Phe Ile Leu Leu Phe Val
            900                 905                 910

Ser Ile Phe Ser Thr Gly Ile Leu Glu Leu Arg Trp Ser Gly Val Thr
        915                 920                 925

Leu Glu Asp Trp Trp Arg Asn Glu Gln Phe Trp Val Ile Gly Gly Thr
    930                 935                 940

Ser Ala His Leu Phe Ala Val Phe Gln Gly Leu Leu Lys Val Leu Ala
945                 950                 955                 960

Gly Ile Asp Thr Asn Phe Thr Val Thr Ser Lys Ala Ser Asp Glu Asp
                965                 970                 975

Gly Asp Phe Ala Glu Leu Tyr Val Phe Lys Trp Thr Ser Leu Leu Ile
            980                 985                 990

Pro Pro Thr Thr Ile Leu Val Val Asn Met Val Gly Ile Val Ala Gly
        995                1000                1005

Val Ser Phe Ala Ile Asn Ser Gly Tyr Gln Ser Trp Gly Pro Leu Phe
   1010                1015                1020

Gly Arg Leu Phe Phe Ala Ile Trp Val Ile Val His Leu Tyr Pro Phe
1025                1030                1035                1040

Leu Lys Gly Leu Leu Gly Arg Gln Asn Arg Thr Pro Thr Ile Val Ile
                1045                1050                1055

Val Trp Ser Val Leu Leu Ala Ser Ile Phe Ser Leu Leu Trp Val Arg
            1060                1065                1070

Ile Asp Pro Phe Thr Ser Asp Ser Thr Lys Ala Arg Gly Gln Cys Gly
        1075                1080                1085

Ile Asp Cys
   1090
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<211> 1560
<212> DNA
<213> Glycine max

<400> 27
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gactacccag tggataaggt ctcctgttat gtctctgatg atggtgctgc tatgttgaca  180
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<210> 28
<211> 431
<212> PRT
<213> Glycine max

<400> 28

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Ala Arg Gly Glu Gly Glu Pro Ser Gln Leu Ala Ala Val Asp Ile Phe
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Val Ser Thr Val Asp Pro Leu Lys Glu Pro Pro Leu Val Thr Ala Asn
             20                  25                  30

Thr Val Leu Ser Ile Leu Ser Val Asp Tyr Pro Val Asp Lys Val Ser
         35                  40                  45

Cys Tyr Val Ser Asp Asp Gly Ala Ala Met Leu Thr Phe Glu Ala Leu
     50                  55                  60

Ala Glu Thr Ser Glu Phe Ala Arg Lys Trp Val Pro Phe Ser Lys Lys
 65                  70                  75                  80

Tyr Asn Ile Glu Pro Arg Ala Pro Glu Trp Tyr Phe Ala Gln Lys Ile
                 85                  90                  95

Asp Tyr Leu Lys Asp Lys Val Gln Pro Ser Phe Val Lys Asp Arg Arg
            100                 105                 110

Ala Met Lys Arg Glu Tyr Glu Glu Phe Lys Ile Arg Ile Asn Gly Leu
        115                 120                 125
```

```
Val Ala Lys Ala Gln Lys Ile Pro Glu Glu Gly Trp Val Met Gln Asp
    130                 135                 140

Gly Thr Pro Trp Pro Gly Asn Asn Thr Arg Asp His Pro Gly Met Ile
145                 150                 155                 160

Gln Val Phe Leu Gly Gln Ser Gly Gly Leu Asp Thr Glu Gly Asn Glu
                165                 170                 175

Leu Pro Arg Leu Val Tyr Val Ser Arg Glu Lys Arg Pro Gly Phe Gln
            180                 185                 190

His His Lys Lys Ala Gly Ala Met Asn Ala Leu Val Arg Val Ser Ala
        195                 200                 205

Val Leu Thr Asn Gly Pro Phe Leu Leu Asn Leu Asp Cys Asp His Tyr
    210                 215                 220

Ile Asn Asn Ser Lys Ala Leu Arg Glu Ala Met Cys Phe Met Met Asp
225                 230                 235                 240

Pro Asn Leu Gly Lys Asn Val Cys Tyr Val Gln Phe Pro Gln Arg Phe
                245                 250                 255

Asp Gly Ile Asp Arg Asn Asp Arg Tyr Ala Asn Arg Asn Thr Val Phe
            260                 265                 270

Phe Asp Ile Asn Leu Arg Gly Leu Asp Gly Ile Gln Gly Pro Val Tyr
        275                 280                 285

Val Gly Thr Gly Cys Val Phe Asn Arg Thr Ala Leu Tyr Gly Tyr Glu
    290                 295                 300

Pro Pro Ile Lys Pro Lys His Lys Lys Pro Gly Phe Leu Ser Ser Leu
305                 310                 315                 320

Cys Gly Gly Asn Arg Lys Lys Arg Ser Lys Ser Ser Lys Lys Gly Ser
                325                 330                 335

Asp Lys Lys Lys Ser Ser Lys Asn Val Asp Pro Thr Val Pro Ile Phe
            340                 345                 350

Ser Leu Glu Asp Ile Glu Glu Gly Val Glu Gly Ala Gly Phe Asp Asp
        355                 360                 365

Glu Lys Ser Leu Leu Met Ser Gln Met Ser Leu Glu Lys Arg Phe Gly
    370                 375                 380

Gln Ser Ala Val Phe Val Ala Ser Thr Leu Met Glu Asn Gly Gly Val
385                 390                 395                 400

Pro Gln Ser Ala Thr Pro Glu Thr Leu Leu Lys Glu Ala Ile His Val
                405                 410                 415

Ile Ser Cys Gly Tyr Glu Asp Lys Ser Glu Trp Gly Ser Glu Val
            420                 425                 430
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<210> 29
<211> 3626
<212> DNA
<213> Triticum aestivum

<400> 29
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gccgcttccc ggtctgccgc ccctgctacg agcacgagcg caaggagggc acccaggcct 240
gcctccagtg caagaccaag tacaagcgcc acagagggag cccagcgatc cgcggggagg 300
aaggcgacga cactgatgcc gatgatggta gtgacttcaa ctaccctgca tctggcactg 360
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gtggcaatgt tggccacccc aagtatgaca gtggcgagat cggcctctcc aagtatgaca 480
gtggagagat ccctagggga tacgtccctt cagtcaccaa cagccagatg tcaggagaaa 540
tccctggagc ttcgcctgat catcacatga tgtcccctac ggggaacatc agcagacgtg 600
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ggaatgttgc ctggaaagag agagttgatg gctggaaaat gaagcaggac aagggtgcga 720
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gatggatcat gcaagatggc acaccatggc caggaaacaa taccagggat catcctggaa 1560
tgattcaggt tttccttggt cacagtggtg gccttgatac tgagggtaat gagctccccc 1620
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ctttggattg taggaatgga cctatgaaat gttgtattta ttatttatat aaattattcc 3600
tgtccttcac attttggagg agtttt 3626

<210> 30
<211> 1080
<212> PRT
<213> Triticum aestivum

<400> 30
Met Asp Gly Asp Ala Asp Ala Leu Lys Ser Gly Arg His Gly Ala Gly
1 5 10 15

Asp Val Cys Gln Ile Cys Ala Asp Gly Leu Gly Thr Thr Leu Asp Gly
20 25 30

Asp Val Phe Thr Ala Cys Asp Val Cys Arg Phe Pro Val Cys Arg Pro
35 40 45

Cys Tyr Glu His Glu Arg Lys Glu Gly Thr Gln Ala Cys Leu Gln Cys
50 55 60

Lys Thr Lys Tyr Lys Arg His Arg Gly Ser Pro Ala Ile Arg Gly Glu
65 70 75 80

Glu Gly Asp Asp Thr Asp Ala Asp Asp Gly Ser Asp Phe Asn Tyr Pro
85 90 95

Ala Ser Gly Thr Glu Asp Gln Lys Gln Lys Ile Ala Asp Arg Met Arg
100 105 110

Ser Trp Arg Met Asn Thr Gly Gly Ser Gly Asn Val Gly His Pro Lys
115 120 125

Tyr Asp Ser Gly Glu Ile Gly Leu Ser Lys Tyr Asp Ser Gly Glu Ile
130 135 140

Pro Arg Gly Tyr Val Pro Ser Val Thr Asn Ser Gln Met Ser Gly Glu
145 150 155 160

Ile Pro Gly Ala Ser Pro Asp His His Met Met Ser Pro Thr Gly Asn
165 170 175

Ile Ser Arg Arg Ala Pro Phe Pro Tyr Val Asn His Ser Pro Asn Pro
180 185 190

Ser Arg Glu Phe Ser Gly Ser Ile Gly Asn Val Ala Trp Lys Glu Arg
195 200 205

```
Val Asp Gly Trp Lys Met Lys Gln Asp Lys Gly Ala Ile Pro Met Thr
    210                 215                 220

Asn Gly Thr Ser Ile Ala Pro Ser Glu Gly Arg Ala Ala Thr Asp Ile
225                 230                 235                 240

Asp Ala Ser Thr Glu Tyr Asn Met Glu Asp Ala Leu Leu Asn Asp Glu
                245                 250                 255

Thr Arg Gln Pro Leu Ser Arg Lys Val Pro Ile Ala Ser Ser Lys Ile
            260                 265                 270

Asn Pro Tyr Arg Met Val Ile Val Leu Arg Leu Val Val Leu Ser Ile
        275                 280                 285

Phe Leu His Tyr Arg Leu Thr Asn Pro Val Arg Asn Ala Tyr Pro Leu
    290                 295                 300

Trp Leu Leu Ser Val Ile Cys Glu Ile Trp Phe Ala Leu Ser Trp Ile
305                 310                 315                 320

Leu Asp Gln Phe Pro Lys Trp Phe Pro Ile Asn Arg Glu Thr Tyr Leu
                325                 330                 335

Asp Arg Leu Ala Leu Arg Tyr Asp Arg Glu Gly Glu Pro Ser Gln Leu
            340                 345                 350

Ala Ala Val Asp Ile Phe Val Ser Thr Val Asp Pro Leu Lys Glu Pro
        355                 360                 365

Pro Ile Val Thr Ala Asn Thr Val Leu Ser Ile Leu Ala Val Asp Tyr
    370                 375                 380

Pro Val Asp Lys Val Ser Cys Tyr Val Ser Asp Asp Gly Ala Ser Met
385                 390                 395                 400

Leu Thr Phe Asp Ala Leu Ala Glu Thr Ser Glu Phe Ala Arg Lys Trp
                405                 410                 415

Val Pro Phe Val Lys Lys Tyr Asp Ile Glu Pro Arg Ala Pro Glu Phe
            420                 425                 430

Tyr Phe Cys Gln Lys Ile Asp Tyr Leu Lys Asp Lys Val Gln Pro Ser
        435                 440                 445

Phe Val Lys Asp Arg Arg Ala Met Lys Arg Glu Tyr Glu Glu Phe Lys
    450                 455                 460

Ile Arg Ile Asn Ala Leu Val Ser Lys Ala Leu Lys Val Pro Glu Glu
465                 470                 475                 480

Gly Trp Ile Met Gln Asp Gly Thr Pro Trp Pro Gly Asn Asn Thr Arg
                485                 490                 495

Asp His Pro Gly Met Ile Gln Val Phe Leu Gly His Ser Gly Gly Leu
            500                 505                 510
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Asp Thr Glu Gly Asn Glu Leu Pro Arg Leu Val Tyr Val Ser Arg Glu
        515                 520                 525

Lys Arg Pro Gly Phe Gln His His Lys Lys Ala Gly Ala Met Asn Ala
    530                 535                 540

Leu Val Arg Val Ser Ala Val Leu Thr Asn Gly Gln Tyr Met Leu Asn
545                 550                 555                 560

Leu Asp Cys Asp His Tyr Ile Asn Asn Ser Lys Ala Val Arg Glu Ala
                565                 570                 575

Met Cys Phe Leu Met Asp Pro Asn Leu Gly Pro Gln Val Cys Tyr Val
            580                 585                 590

Gln Phe Pro Gln Arg Phe Asp Gly Ile Asp Arg Asn Asp Arg Tyr Ala
        595                 600                 605

Asn Arg Asn Thr Val Phe Phe Asp Ile Asn Leu Arg Gly Leu Asp Gly
    610                 615                 620

Ile Gln Gly Pro Val Tyr Val Gly Thr Gly Cys Val Phe Asn Arg Thr
625                 630                 635                 640

Ala Ile Tyr Gly Tyr Glu Pro Pro Ile Lys Ala Lys Lys Pro Gly Phe
                645                 650                 655

Leu Ala Ser Leu Cys Gly Gly Lys Lys Lys Ala Ser Lys Ser Lys Lys
            660                 665                 670

Arg Ser Ser Asp Lys Lys Lys Ser Asn Lys His Val Asp Ser Ser Val
        675                 680                 685

Pro Val Phe Asn Leu Glu Asp Ile Glu Glu Gly Val Glu Gly Ala Gly
    690                 695                 700

Phe Asp Asp Glu Lys Ser Val Leu Met Ser Gln Met Ser Leu Glu Lys
705                 710                 715                 720

Arg Phe Gly Gln Ser Ala Ala Phe Val Ala Ser Thr Leu Met Glu Tyr
                725                 730                 735

Gly Gly Val Pro Gln Ser Ser Thr Pro Glu Ser Leu Leu Lys Glu Ala
            740                 745                 750

Ile His Val Ile Ser Cys Gly Tyr Glu Asp Lys Ser Glu Trp Gly Thr
        755                 760                 765

Glu Ile Gly Trp Ile Tyr Gly Ser Val Thr Glu Asp Ile Leu Thr Gly
    770                 775                 780

Phe Lys Met His Ala Arg Gly Trp Arg Ser Val Tyr Cys Met Pro Lys
785                 790                 795                 800

Arg Pro Ala Phe Lys Gly Ser Ala Pro Ile Asn Leu Ser Asp Arg Leu
                805                 810                 815
```

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Asn Gln Val Leu Arg Trp Ala Leu Gly Ser Val Glu Ile Leu Phe Ser
            820                 825                 830

Arg His Cys Pro Leu Trp Tyr Gly Tyr Gly Gly Arg Leu Lys Phe Leu
        835                 840                 845

Glu Arg Phe Ala Tyr Ile Asn Thr Thr Ile Tyr Pro Leu Thr Ser Leu
    850                 855                 860

Pro Leu Leu Val Tyr Cys Ile Leu Pro Ala Ile Cys Leu Leu Thr Gly
865                 870                 875                 880

Lys Phe Ile Met Pro Glu Ile Ser Asn Leu Ala Ser Ile Trp Phe Ile
                885                 890                 895

Ala Leu Phe Leu Ser Ile Phe Ala Thr Gly Ile Leu Glu Met Arg Trp
            900                 905                 910

Ser Gly Val Gly Ile Asp Glu Trp Trp Arg Asn Glu Gln Phe Trp Val
        915                 920                 925

Ile Gly Gly Ile Ser Ala His Leu Phe Ala Val Phe Gln Gly Leu Leu
    930                 935                 940

Lys Val Leu Ala Gly Ile Asp Thr Asn Phe Thr Val Thr Ser Lys Ala
945                 950                 955                 960

Asn Asp Glu Glu Gly Asp Phe Ala Glu Leu Tyr Met Phe Lys Trp Thr
                965                 970                 975

Thr Leu Leu Ile Pro Pro Thr Thr Ile Leu Ile Ile Asn Met Val Gly
            980                 985                 990

Val Val Ala Gly Thr Ser Tyr Ala Ile Asn Ser Gly Tyr Gln Ser Trp
        995                1000                1005

Gly Pro Leu Phe Gly Lys Leu Phe Phe Ala Phe Trp Val Ile Val His
   1010                1015                1020

Leu Tyr Pro Phe Leu Lys Gly Leu Met Gly Arg Gln Asn Arg Thr Pro
1025                1030                1035                1040

Thr Ile Val Ile Val Trp Ala Val Leu Leu Ala Ser Ile Phe Ser Leu
               1045                1050                1055

Leu Trp Val Arg Val Asp Pro Phe Thr Thr Arg Leu Ala Gly Pro Asn
           1060                1065                1070

Ile Gln Thr Cys Gly Ile Asn Cys
       1075                1080
```

<210> 31
<211> 685
<212> PRT
<213> Gossypium hirsutum

<400> 31

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Arg Arg Trp Val Pro Phe Cys Lys Lys His Asn Val Glu Pro Arg Ala
  1               5                  10                  15

Pro Glu Phe Tyr Phe Asn Glu Lys Ile Asp Tyr Leu Lys Asp Lys Val
             20                  25                  30

His Pro Ser Phe Val Lys Glu Arg Arg Ala Met Lys Arg Glu Tyr Glu
         35                  40                  45

Glu Phe Lys Val Arg Ile Asn Ala Leu Val Ala Lys Ala Gln Lys Lys
     50                  55                  60

Pro Glu Glu Gly Trp Val Met Gln Asp Gly Thr Pro Trp Pro Gly Asn
 65                  70                  75                  80

Asn Thr Arg Asp His Pro Gly Met Ile Gln Val Tyr Leu Gly Ser Ala
                 85                  90                  95

Gly Ala Leu Asp Val Asp Gly Lys Glu Leu Pro Arg Leu Val Tyr Val
            100                 105                 110

Ser Arg Glu Lys Arg Pro Gly Tyr Gln His His Lys Lys Ala Gly Ala
        115                 120                 125

Glu Asn Ala Leu Val Arg Val Ser Ala Val Leu Thr Asn Ala Pro Phe
    130                 135                 140

Ile Leu Asn Leu Asp Cys Asp His Tyr Ile Asn Asn Ser Lys Ala Met
145                 150                 155                 160

Arg Glu Ala Met Cys Phe Leu Met Asp Pro Gln Phe Gly Lys Lys Leu
                165                 170                 175

Cys Tyr Val Gln Phe Pro Gln Arg Phe Asp Gly Ile Asp Arg His Asp
            180                 185                 190

Arg Tyr Ala Asn Arg Asn Val Val Phe Phe Asp Ile Asn Met Leu Gly
        195                 200                 205

Leu Asp Gly Leu Gln Gly Pro Val Tyr Val Gly Thr Gly Cys Val Phe
    210                 215                 220

Asn Arg Gln Ala Leu Tyr Gly Tyr Asp Pro Pro Val Ser Glu Lys Arg
225                 230                 235                 240

Pro Lys Met Thr Cys Asp Cys Trp Pro Ser Trp Cys Cys Cys Cys Cys
                245                 250                 255

Gly Gly Ser Arg Lys Lys Ser Lys Lys Lys Gly Glu Lys Lys Gly Leu
            260                 265                 270

Leu Gly Gly Leu Leu Tyr Gly Lys Lys Lys Lys Met Met Gly Lys Asn
        275                 280                 285

Tyr Val Lys Lys Gly Ser Ala Pro Val Phe Asp Leu Glu Glu Ile Glu
```

```
    290                 295                 300

Glu Gly Leu Glu Gly Tyr Glu Glu Leu Glu Lys Ser Thr Leu Met Ser
305                 310                 315                 320

Gln Lys Asn Phe Glu Lys Arg Phe Gly Gln Ser Pro Val Phe Ile Ala
                325                 330                 335

Ser Thr Leu Met Glu Asn Gly Gly Leu Pro Glu Gly Thr Asn Ser Thr
            340                 345                 350

Ser Leu Ile Lys Glu Ala Ile His Val Ile Ser Cys Gly Tyr Glu Glu
        355                 360                 365

Lys Thr Glu Trp Gly Lys Glu Ile Gly Trp Ile Tyr Gly Ser Val Thr
    370                 375                 380

Glu Asp Ile Leu Thr Gly Phe Lys Met His Cys Arg Gly Trp Lys Ser
385                 390                 395                 400

Val Tyr Cys Val Pro Lys Arg Pro Ala Phe Lys Gly Ser Ala Pro Ile
                405                 410                 415

Asn Leu Ser Asp Arg Leu His Gln Val Leu Arg Trp Ala Leu Gly Ser
            420                 425                 430

Val Glu Ile Phe Leu Ser Arg His Cys Pro Leu Trp Tyr Gly Tyr Gly
        435                 440                 445

Gly Lys Leu Lys Trp Leu Glu Arg Leu Ala Tyr Ile Asn Thr Ile Val
    450                 455                 460

Tyr Pro Phe Thr Ser Ile Pro Leu Leu Ala Tyr Cys Thr Ile Pro Ala
465                 470                 475                 480

Val Cys Leu Leu Thr Gly Lys Phe Ile Ile Pro Thr Leu Ser Asn Leu
                485                 490                 495

Thr Ser Val Trp Phe Leu Ala Leu Phe Leu Ser Ile Ile Ala Thr Gly
            500                 505                 510

Val Leu Glu Leu Arg Trp Ser Gly Val Ser Ile Gln Asp Trp Trp Arg
        515                 520                 525

Asn Glu Gln Phe Trp Val Ile Gly Gly Val Ser Ala His Leu Phe Ala
    530                 535                 540

Val Phe Gln Gly Leu Leu Lys Val Leu Ala Gly Val Asp Thr Asn Phe
545                 550                 555                 560

Thr Val Thr Ala Lys Ala Ala Asp Asp Thr Glu Phe Gly Glu Leu Tyr
                565                 570                 575

Leu Phe Lys Trp Thr Thr Leu Leu Ile Pro Pro Thr Thr Leu Ile Ile
            580                 585                 590

Leu Asn Met Val Gly Val Val Ala Gly Val Ser Asp Ala Ile Asn Asn
```

595 600 605

Gly Tyr Gly Ser Trp Gly Pro Leu Phe Gly Lys Leu Phe Phe Ala Phe
610 615 620

Trp Val Ile Leu His Leu Tyr Pro Phe Leu Lys Gly Leu Met Gly Arg
625 630 635 640

Gln Asn Arg Thr Pro Thr Ile Val Val Leu Trp Ser Ile Leu Leu Ala
645 650 655

Ser Ile Phe Ser Leu Val Trp Val Arg Ile Asp Pro Phe Leu Pro Lys
660 665 670

Gln Thr Gly Pro Val Leu Lys Gln Cys Gly Val Glu Cys
675 680 685

<210> 32
<211> 701
<212> PRT
<213> Gossypium hirsutum

<400> 32
Asp Tyr Pro Val Glu Lys Val Ser Cys Tyr Val Ser Asp Asp Gly Ala
1 5 10 15

Ala Met Leu Thr Phe Glu Ala Leu Ser Glu Thr Ser Glu Phe Ala Arg
20 25 30

Lys Trp Val Pro Phe Cys Lys Lys Tyr Asn Ile Glu Pro Arg Ala Pro
35 40 45

Glu Trp Tyr Phe Ala Gln Lys Ile Asp Tyr Leu Lys Asp Lys Val Gln
50 55 60

Thr Ser Phe Val Lys Glu Arg Arg Ala Met Lys Arg Glu Tyr Glu Glu
65 70 75 80

Phe Lys Val Arg Val Asn Gly Leu Val Ala Lys Ala Gln Lys Val Pro
85 90 95

Glu Glu Gly Trp Ile Met Gln Asp Gly Thr Pro Trp Pro Gly Asn Asn
100 105 110

Thr Arg Asp His Pro Gly Met Ile Gln Val Phe Leu Gly Gln Ser Gly
115 120 125

Gly Leu Asp Ala Glu Gly Asn Glu Leu Pro Arg Leu Val Tyr Val Ser
130 135 140

Arg Glu Lys Arg Pro Gly Phe Gln His His Lys Lys Ala Gly Ala Met
145 150 155 160

Asn Ala Leu Val Arg Val Ser Ala Val Leu Thr Asn Gly Ala Phe Leu
165 170 175

```
Leu Asn Leu Asp Cys Asp His Tyr Ile Asn Asn Ser Lys Ala Leu Arg
            180                 185                 190

Glu Ala Met Cys Phe Leu Met Asp Pro Asn Leu Gly Lys Gln Val Cys
        195                 200                 205

Tyr Val Gln Phe Pro Gln Arg Phe Asp Gly Ile Asp Arg Asn Asp Arg
    210                 215                 220

Tyr Ala Asn Arg Asn Thr Val Phe Phe Asp Ile Asn Leu Arg Gly Leu
225                 230                 235                 240

Asp Gly Ile Gln Gly Pro Val Tyr Val Gly Thr Gly Cys Val Phe Asn
                245                 250                 255

Arg Thr Ala Leu Tyr Gly Tyr Glu Pro Pro Leu Lys Pro Lys His Arg
            260                 265                 270

Lys Thr Gly Ile Leu Ser Ser Leu Cys Gly Gly Ser Arg Lys Lys Ser
        275                 280                 285

Ser Lys Ser Ser Lys Lys Gly Ser Asp Lys Lys Lys Ser Gly Lys His
    290                 295                 300

Val Asp Ser Thr Val Pro Val Phe Asn Leu Glu Asp Ile Glu Glu Gly
305                 310                 315                 320

Val Glu Gly Ala Gly Phe Asp Asp Glu Lys Ser Leu Leu Met Ser Gln
                325                 330                 335

Met Ser Leu Glu Lys Arg Phe Gly Gln Ser Ala Val Phe Val Ala Ser
            340                 345                 350

Thr Leu Met Glu Asn Gly Gly Val Pro Gln Ser Ala Thr Pro Glu Thr
        355                 360                 365

Leu Leu Lys Glu Ala Ile His Val Ile Ser Cys Gly Tyr Glu Asp Lys
    370                 375                 380

Thr Asp Trp Gly Ser Glu Ile Gly Trp Ile Tyr Gly Ser Val Thr Glu
385                 390                 395                 400

Asp Ile Leu Thr Gly Phe Lys Met His Ala Arg Gly Trp Arg Ser Ile
                405                 410                 415

Tyr Cys Met Pro Lys Arg Pro Ala Phe Lys Gly Ser Ala Pro Ile Asn
            420                 425                 430

Leu Ser Asp Arg Leu Asn Gln Val Leu Arg Trp Ala Leu Gly Ser Val
        435                 440                 445

Glu Ile Leu Phe Ser Arg His Cys Pro Ile Trp Tyr Gly Tyr Ser Gly
    450                 455                 460

Arg Leu Lys Trp Leu Glu Arg Phe Ala Tyr Val Asn Thr Thr Ile Tyr
465                 470                 475                 480
```

```
Pro Val Thr Ala Ile Pro Leu Leu Met Tyr Cys Thr Leu Pro Ala Val
                485                 490                 495

Cys Leu Leu Thr Asn Lys Phe Ile Ile Pro Gln Ile Ser Asn Leu Ala
            500                 505                 510

Ser Ile Trp Phe Ile Ser Leu Phe Leu Ser Ile Phe Ala Thr Gly Ile
        515                 520                 525

Leu Lys Met Lys Trp Asn Gly Val Gly Ile Asp Gln Trp Trp Arg Asn
    530                 535                 540

Glu Gln Phe Trp Val Ile Gly Gly Val Ser Ala His Leu Phe Ala Val
545                 550                 555                 560

Phe Gln Gly Leu Leu Lys Val Leu Ala Gly Ile Asp Thr Asn Phe Thr
                565                 570                 575

Val Thr Ser Lys Ala Ser Asp Glu Asp Gly Asp Phe Ala Glu Leu Tyr
            580                 585                 590

Met Phe Lys Trp Thr Thr Leu Leu Ile Pro Pro Thr Thr Leu Leu Ile
        595                 600                 605

Ile Asn Leu Val Gly Val Val Ala Gly Ile Ser Tyr Val Ile Asn Ser
    610                 615                 620

Gly Tyr Gln Ser Trp Gly Pro Leu Phe Gly Lys Leu Phe Phe Ala Phe
625                 630                 635                 640

Trp Val Ile Ile His Leu Tyr Pro Phe Leu Lys Gly Leu Met Gly Arg
                645                 650                 655

Gln Asn Arg Thr Pro Thr Ile Val Val Val Trp Ser Ile Leu Leu Ala
            660                 665                 670

Ser Ile Phe Ser Leu Leu Trp Val Arg Ile Asp Pro Phe Thr Thr Arg
        675                 680                 685

Val Thr Gly Pro Asp Val Glu Gln Cys Gly Ile Asn Cys
    690                 695                 700


<210> 33
<211> 1065
<212> PRT
<213> Arabidopsis thaliana

<400> 33
Met Glu Ser Glu Gly Glu Thr Ala Gly Lys Pro Met Lys Asn Ile Val
  1               5                  10                  15

Pro Gln Thr Cys Gln Ile Cys Ser Asp Asn Val Gly Lys Thr Val Asp
             20                  25                  30

Gly Asp Arg Phe Val Ala Cys Asp Ile Cys Ser Phe Pro Val Cys Arg
         35                  40                  45
```

```
Pro Cys Tyr Glu Tyr Glu Arg Lys Asp Gly Asn Gln Ser Cys Pro Gln
     50                  55                  60

Cys Lys Thr Arg Tyr Lys Arg Leu Lys Gly Ser Pro Ala Ile Pro Gly
 65                  70                  75                  80

Asp Lys Asp Glu Asp Gly Leu Ala Asp Glu Gly Thr Val Glu Phe Asn
                 85                  90                  95

Tyr Pro Gln Lys Glu Lys Ile Ser Glu Arg Met Leu Gly Trp His Leu
            100                 105                 110

Thr Arg Gly Lys Gly Glu Glu Met Gly Glu Pro Gln Tyr Asp Lys Glu
        115                 120                 125

Val Ser His Asn His Leu Pro Arg Leu Thr Ser Arg Gln Asp Thr Ser
    130                 135                 140

Gly Glu Phe Ser Ala Ala Ser Pro Glu Arg Leu Ser Val Ser Ser Thr
145                 150                 155                 160

Ile Ala Gly Gly Lys Arg Leu Pro Tyr Ser Ser Asp Val Asn Gln Ser
                165                 170                 175

Pro Asn Arg Arg Ile Val Asp Pro Val Gly Leu Gly Asn Val Ala Trp
            180                 185                 190

Lys Glu Arg Val Asp Gly Trp Lys Met Lys Gln Glu Lys Asn Thr Gly
        195                 200                 205

Pro Val Ser Thr Gln Ala Ala Ser Glu Arg Gly Gly Val Asp Ile Asp
    210                 215                 220

Ala Ser Thr Asp Ile Leu Ala Asp Glu Ala Leu Leu Asn Asp Glu Ala
225                 230                 235                 240

Arg Gln Pro Leu Ser Arg Lys Val Ser Ile Pro Ser Ser Arg Ile Asn
                245                 250                 255

Pro Tyr Arg Met Val Ile Met Leu Arg Leu Val Ile Leu Cys Leu Phe
            260                 265                 270

Leu His Tyr Arg Ile Thr Asn Pro Val Pro Asn Ala Phe Ala Leu Trp
        275                 280                 285

Leu Val Ser Val Ile Cys Glu Ile Trp Phe Ala Leu Ser Trp Ile Leu
    290                 295                 300

Asp Gln Phe Pro Lys Trp Phe Pro Val Asn Arg Glu Thr Tyr Leu Asp
305                 310                 315                 320

Arg Leu Ala Leu Arg Tyr Asp Arg Glu Gly Glu Pro Ser Gln Leu Ala
                325                 330                 335

Ala Val Asp Ile Phe Val Ser Thr Val Asp Pro Leu Lys Glu Pro Pro
            340                 345                 350
```

```
Leu Val Thr Ala Asn Thr Val Leu Ser Ile Leu Ala Val Asp Tyr Pro
        355                 360                 365

Val Asp Lys Val Ser Cys Tyr Val Phe Asp Asp Gly Ala Ala Met Leu
    370                 375                 380

Ser Phe Glu Ser Leu Ala Glu Thr Ser Glu Phe Ala Arg Lys Trp Val
385                 390                 395                 400

Pro Phe Cys Lys Lys Tyr Ser Ile Glu Pro Arg Ala Pro Glu Trp Tyr
                405                 410                 415

Phe Ala Ala Lys Ile Asp Tyr Leu Lys Asp Lys Val Gln Thr Ser Phe
            420                 425                 430

Val Lys Asp Arg Arg Ala Met Lys Arg Glu Tyr Glu Glu Phe Lys Ile
        435                 440                 445

Arg Ile Asn Ala Leu Val Ser Lys Ala Leu Lys Cys Pro Glu Glu Gly
    450                 455                 460

Trp Val Met Gln Asp Gly Thr Pro Trp Pro Gly Asn Asn Thr Gly Asp
465                 470                 475                 480

His Pro Gly Met Ile Gln Val Phe Leu Gly Gln Asn Gly Gly Leu Asp
                485                 490                 495

Ala Glu Gly Asn Glu Leu Pro Arg Leu Val Tyr Val Ser Arg Glu Lys
            500                 505                 510

Arg Pro Gly Phe Gln His His Lys Lys Ala Gly Ala Met Asn Ala Leu
        515                 520                 525

Val Arg Val Ser Ala Val Leu Thr Asn Gly Pro Phe Ile Leu Asn Leu
    530                 535                 540

Asp Cys Asp His Tyr Ile Asn Asn Ser Lys Ala Leu Arg Glu Ala Met
545                 550                 555                 560

Cys Phe Leu Met Asp Pro Asn Leu Gly Lys Gln Val Cys Tyr Val Gln
                565                 570                 575

Phe Pro Gln Arg Phe Asp Gly Ile Asp Lys Asn Asp Arg Tyr Ala Asn
            580                 585                 590

Arg Asn Thr Val Phe Phe Asp Ile Asn Leu Arg Gly Leu Asp Gly Ile
        595                 600                 605

Gln Gly Pro Val Tyr Val Gly Thr Gly Cys Val Phe Asn Arg Thr Ala
    610                 615                 620

Leu Tyr Gly Tyr Glu Pro Pro Ile Lys Val Lys His Lys Lys Pro Ser
625                 630                 635                 640

Leu Leu Ser Lys Leu Cys Gly Gly Ser Arg Lys Lys Asn Ser Lys Ala
                645                 650                 655
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Lys Lys Glu Ser Asp Lys Lys Lys Ser Gly Arg His Thr Asp Ser Thr
            660                 665                 670

Val Pro Val Phe Asn Leu Asp Asp Ile Glu Glu Gly Val Glu Gly Ala
        675                 680                 685

Gly Phe Asp Asp Glu Lys Ala Leu Leu Met Ser Gln Met Ser Leu Glu
    690                 695                 700

Lys Arg Phe Gly Gln Ser Ala Val Phe Val Ala Ser Thr Leu Met Glu
705                 710                 715                 720

Asn Gly Gly Val Pro Pro Ser Ala Thr Pro Glu Asn Leu Leu Lys Glu
                725                 730                 735

Ala Ile His Val Ile Ser Cys Gly Tyr Glu Asp Lys Ser Asp Trp Gly
            740                 745                 750

Met Glu Ile Gly Trp Ile Tyr Gly Ser Val Thr Glu Asp Ile Leu Thr
        755                 760                 765

Gly Phe Lys Met His Ala Arg Gly Trp Arg Ser Ile Tyr Cys Met Pro
    770                 775                 780

Lys Leu Pro Ala Phe Lys Gly Ser Ala Pro Ile Asn Leu Ser Asp Arg
785                 790                 795                 800

Leu Asn Gln Val Leu Arg Trp Ala Leu Gly Ser Val Glu Ile Leu Phe
                805                 810                 815

Ser Arg His Cys Pro Ile Trp Tyr Gly Tyr Asn Gly Arg Leu Lys Phe
            820                 825                 830

Leu Glu Arg Phe Ala Tyr Val Asn Thr Thr Ile Tyr Pro Ile Thr Ser
        835                 840                 845

Ile Pro Leu Leu Met Tyr Cys Thr Leu Leu Ala Val Cys Leu Phe Thr
    850                 855                 860

Asn Gln Phe Ile Ile Pro Gln Ile Ser Asn Ile Ala Ser Ile Trp Phe
865                 870                 875                 880

Leu Ser Leu Phe Leu Ser Ile Phe Ala Thr Gly Ile Leu Glu Met Arg
                885                 890                 895

Trp Ser Gly Val Gly Ile Asp Glu Trp Trp Arg Asn Glu Gln Phe Trp
            900                 905                 910

Val Ile Gly Gly Val Ser Ala His Leu Phe Ala Val Phe Gln Gly Ile
        915                 920                 925

Leu Lys Val Leu Ala Gly Ile Asp Thr Asn Phe Thr Val Thr Ser Lys
    930                 935                 940

Ala Ser Asp Glu Asp Gly Asp Phe Ala Glu Leu Tyr Leu Phe Lys Trp
945                 950                 955                 960
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Thr Thr Leu Leu Ile Pro Pro Thr Thr Leu Leu Ile Val Asn Leu Val
                965                 970                 975

Gly Val Val Ala Gly Val Ser Tyr Ala Ile Asn Ser Gly Tyr Gln Ser
            980                 985                 990

Trp Gly Pro Leu Phe Gly Lys Leu Phe Phe Ala Phe Trp Val Ile Val
        995                1000                1005

His Leu Tyr Pro Phe Leu Lys Gly Leu Met Gly Arg Gln Asn Arg Thr
   1010                1015                1020

Pro Thr Ile Val Val Val Trp Ser Val Leu Leu Ala Ser Ile Phe Ser
1025                1030                1035                1040

Leu Leu Trp Val Arg Ile Asp Pro Phe Thr Ser Arg Val Thr Gly Pro
                1045                1050                1055

Asp Ile Leu Glu Cys Gly Ile Asn Cys
            1060                1065
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B' cont